

## What is an Engineered Repair from SV+S?

**The goal of an Engineered Repair is to objectively evaluate the valve and actuator assembly that has defied ordinary solutions for a given application and engineer improvements that enhance overall performance.**

### Engineered Valve Repair Procedure

1. Make an assessment of the mechanical and material competence of the existing valve and actuator design for the specifics of the application.
2. Identify any existing weaknesses in geometry, material, and/or the external system.
3. Incorporate recommended improvements into a revised design.
4. Construct individual components and inspect final assembly to standards that meet or exceed those of the original equipment, tailored to the specific application.

### How does an Engineered Repair differ from a typical repair?

A **Regular Repair** has no formal mechanical and material review. Normally an authorized facility performs the repair with components supplied by the OEM. The repair consists of reconstructing the valve or actuator to as “like new” condition as practical. Components used are the same that provided unsatisfactory service leading to the repair.

The regular repair may be conducted in the spirit of warranty avoidance by the authorized repair shop or warranty implementation by the owner. In either case the implementation of true improvement is restricted.

An **Engineered Repair** is performed by qualified mechanical engineers and technicians with extensive field and design experience. Best practices from their library of lessons learned in challenging services are applied, based upon criteria uniquely suited to the specific valve application. The valve is examined and judgments made as to the appropriateness of the original design and materials. The design and/or materials of the components and assembly are revised to improve performance.

The heart of an **Engineered Repair** is an objective, experienced assessment of the current components and the resulting report. Based on this, an informed decision on the most appropriate corrective action can be made to:

- Implement the Engineered Repair
- Order a regular repair
- Objective third party valve failure analysis, or
- Choose other informed corrective actions.

## Frequently Asked Questions about SV+S Engineered Repairs

### ***Is an Engineered Repair more expensive than a Regular Repair?***

Usually the cost of the repair will be greater than the Regular Repair because it includes an assessment and application specific design changes. Components and assemblies may be more expensive because of more expensive materials needed to improve performance and correct deficiencies.

When valves/actuators are habitually failing and causing lost production and high maintenance costs, the Engineered Repair provides a roadmap to the most cost effective path of corrective actions to achieve the desired performance.

### ***Does the Engineered Repair include a warranty?***

No. A warranty is “usually a written guarantee of the integrity of a product and of the maker's responsibility for the repair or replacement of defective parts”. Since SV+S is not a manufacturer this is not appropriate. The service performed is more similar to that of a doctor where a collaborative process of discovery, assessment, diagnosis and testing is needed. Sometimes more than one round of evaluations and corrective actions must be implemented to achieve the desired result. Selection of the most experienced diagnostician saves time and money by shortening the learning curve. When the owner requires higher levels of confidence, additional analysis and testing may be justified. A partnership approach is the most constructive, least costly method for the owner and SV+S to achieve desired performance goals with problematic applications.

### ***What if the Engineered Repair does not achieve the desired performance?***

In some cases valve performance may fall short of the ultimate goal on an initial attempt. However, each test under field conditions allows us to validate or invalidate the hypothesis of the repair, furnishing more data to further enhance the valve design/material selection. Even in the case of an invalid hypothesis, progress is made toward a better hypothetical design based on the additional information available.

### ***What is the advantage of a SV+S Engineered Repair over repair houses that employ engineers?***

Objectivity and extensive experience. SV+S's unique combination of skills, experience and commitment to the scientific method, free from a manufacturer's bias, improves the probability of effective improvement.